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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/526,127	03/15/2000	Yoshihisa Usami	Q58292	9460

7590

08/07/2003

Sughrue Mion Zinn
MacPeak & Seas PLLC
2100 Pennsylvania Avenue NW
Washington, DC 20037-3202

EXAMINER

FERGUSON, LAWRENCE D

ART UNIT

PAPER NUMBER

1774

DATE MAILED: 08/07/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/526,127

Applicant(s)

USAMI ET AL.

Examiner

Lawrence D Ferguson

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This action is in response to the amendment mailed May 14, 2003.

Claims 1 and 11 were amended rendering claims 1-20 are pending.

Claim Rejections - 35 USC § 103(a)

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raychaudhuri et al. (EP 0747895 A2) in view of Hurditch et al (U.S. 5,952,073).

4. Raychaudhuri teaches the storing and reproducing of digital information within a compact disk (page 2, lines 16-25) having a recording layer and a first minimum in reflectance (page 2, lines 40-41). Raychaudhuri discloses a substrate having a recording layer and light reflecting layer with the thickness of the recording layer and the reflecting layer being selected such that the R_{\min} reflectivity (first minimum reflectance) is greater than 70% for a laser wavelength of about 780nm (page 3, lines 8-13). The reference discloses a typical plot (Fig. 1) of the reflectivity versus the thickness of a

Art Unit: 1774

recording element (page 3, line 24) with 14 to 30 thickness units (arbitrarily chosen) from the reflectivity versus thickness curve (page 3, lines 43-45) where the substrate is transparent (page 3, lines 49-50). Raychaudhuri discloses a writable compact disc with a write and read laser (column 4, lines 1-2) where the substrate includes a guide groove (page 4, line 9) and additionally discloses the thickness of the individual sublayers can be adjusted (page 5, line 53). Although Raychaudhuri does not explicitly disclose irradiating the disc, it would be obvious to one of ordinary skill in the art that in order to write on the disc, the disc would have to be irradiated with the laser.

Raychaudhuri does not show that the recordable disc has a half-width of the pregroove, thickness percentage of the recording layer or the laser wavelength. However, such half-width, thickness percentage and wavelength are properties which can be easily determined by one of ordinary skill in the art. With regard to the limitation of the half-width, thickness percentage and wavelength, absent a showing of unexpected results, it is obvious to modify the conditions of a composition because they are merely the result of routine experimentation. The experimental modification of prior art in order to optimize operation conditions (e.g. half-width, thickness percentage and wavelength) fails to render claims patentable in the absence of unexpected results. All of the aforementioned limitations are optimizable as they directly affect the durability and mechanical strength of the recordable disc. As such, they are optimizable. It would have been obvious to one of ordinary skill in the art to make the recordable disc with the limitations of the half-width, thickness percentage and wavelength since it has been held that discovering an optimum value of a result effective variable involves only

Art Unit: 1774

routine skill in the art. *In re Boesch*, 617 USPQ 215 (CCPA 1980). Raychaudhuri does not disclose a spiral pregroove with a depth or the recording layer containing a dye.

Hurditch teaches a transparent substrate (column 7, line 16) used in DVD-R applications (column 7, line 44) having a dye-containing recording layer with a spiral tracking groove (often referred to as the pregroove) with the groove having a depth of 100-250nm (column 7, lines 46-53). Hurditch teaches depositing the dye containing layer onto the grooves and on adjacent lands between the grooves (column 2, lines 39-43). Hurditch teaches a digital compact disk using a laser wavelength of about 630-650 nm (column 2, line 16).

Raychaudhuri and Hurditch are analogous art because they are from the same field of optical recording media. It would have been obvious to include the dye in the recording layer of Raychaudhuri since Hurditch shows that dyes in grooves are known and have the capability of increasing photostability in optical recording layers. Additionally, it would have been obvious to one of ordinary skill in the art to include the spiral pregroove with a depth of 100-250nm in the transparent substrate of Raychaudhuri since Hurditch shows that this is a commonly used depth within the art. Additionally, the depth of the spiral pregroove is an optimizable feature of the recording layer.

Response to Arguments

5. Applicant's arguments of rejection under 35 USC 103(a) as unpatentable over Raychaudhuri et al. (EP 0747895) in view of Hurditch et al. (U.S. 5,952,073) have been considered but are unpersuasive. Applicant argues that the present invention is not

Art Unit: 1774

obvious over the disclosures of Raychaudhuri in view of Hurditch because the individual layers which can be adjusted are individual sublayers is not a recording dye layer but rather a complex metal oxide layer. Examiner is not persuaded by this argument because one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The combined references teach a recording dye layer having an adjustable thickness. Raychaudhuri discloses a writable compact disc with a write and read laser (column 4, lines 1-2) where the substrate includes a guide groove (page 4, line 9) and additionally discloses the thickness of the individual sublayers can be adjusted (page 5, line 53) and Hurditch teaches a transparent substrate (column 7, line 16) used in DVD-R applications (column 7, line 44) having a dye-containing recording layer with a spiral tracking groove (often referred to as the pregroove) with the groove having a depth of 100-250nm (column 7, lines 46-53). Applicant argues the cited description in Raychaudhuri et al reading the '70% reflectivity in the first minimum position is achievable in many ways, namely, by adjusting the thickness composition and CH₄ flow rate, etc. for the individual sublayers' does not teach or disclose the characteristic features of Applicants' claimed invention. This argument lacks relevance because Applicant fails to disclose which characteristic features of the claimed invention are being referred to. Applicant argues the read and write laser of Raychaudhuri is not a DVD-R but is a CD-R. Applicant is attempting to show nonobviousness by attacking references individually where the rejections are based on combinations of references.

Hurditch specifically teaches use of recording dye layers in CD-R and DVD-R. The material used in one element can be used in the other element, absent any evidence to the contrary. Applicant further argues Raychaudhuri and Hurditch are non-analogous art. Examiner respectfully disagrees because both references are from the same field of optical recordable media. It should also be noted that the Raychaudhuri reference reads on a recordable element that can include different types of elements including DVD. Hurditch specifically teaches use of recording dye layers in CD-R and DVD-R. The material used in one element can be used in the other element. So the examiner's use of the Hurditch reference and Raychaudhuri reference to show Applicant's invention is definitely appropriate.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Ferguson whose telephone number is (703) 305-9978. The examiner can normally be reached on Monday through Friday 8:30 AM - 4:30PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. Please allow the examiner twenty-four hours to return your call.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for

Art Unit: 1774

After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2351.



Lawrence D. Ferguson
Examiner
Art Unit 1774

CYNTHIA H. KELLY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

